DOMESTIC ENGINEERING

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Suggestion:
Cut out; frame neatly; put in show window; change weekly.

YOU DON'T EAT MUD;

Why should you drink it? Could you gather the dirt you take in a day's consumption of drinking water, so you could actually see it, you would recoil at the sight. The remedy is to filter your drinking water. We have the agency of the best domestic filter made, and are prepared to install it in your premises in the same efficient manner which characterizes all our plumbing and heating work.

For Our Readers Who Have Children

"Domestic Engineering" is not, primarily, a journal for the home. It is a workers' paper and aims to serve its readers well in the shop and office. But behind all daily activities is the home. Behind the citizenship of the future are the children of the present. Hence it feels that the following communication, palpitating with love of children and home, should occupy the position of our leading editorial this week. It is full of good sense; offers useful counsel to fathers; points the educational needs of your children. It is written by the wife of a plumber and steamfitter, and is so sane and timely that all plumbers and steamfitters who have brought children into the world should read it.

North Tonawanda, N. Y.—To the Editor of "Domestic Engineering." Sir:—Your issue of September 25, 1909, containing an article by "Phoenix" on "Practical Education," cannot be too highly commended. It is intensely practical and graciously humane in the defense of children's inability to grapple with the affairs that go towards personal maintenance. It would be well if every parent in America could read it and act upon it.

We are credited with having the best educational system in the world and I believe we have, were it put to use under the law of common sense; but as education stands today for the masses it might well be named a "modern juggernaut." We, as American citizens (as far as the education of our children is concerned), are lashed into obedience by a tyrant maintained and created by ourselves. We look on it as a matter of course that our children have to be educated at any cost (even the cost of their lives), as our statistics all over our country record each succeeding month. Why is it that we have so many bespectacled children and so much nervous prostration among them, especially at the end of the semester? Simply because we lose sight of the meaning of the word education, as it is explained by Webster, viz., "Instruction of the children or of the people; a strengthening of the power of body and mind."

I have examined many of the questions propounded on the regents' examination papers, and I venture to say that the man who compiles them could not himself answer them correctly. The horror of those stupid and unjust examinations have broken down many a poor child and broken their hearts, all to maintain a standard in order to get a certain state appropriation and keep up the salaries of the instructors. From the common sense side of the matter I ask: What do we send our children to school for? It is like sending the spun material to the weaver to be woven. Now there are weavers and weavers, and those of us who have the spun material watch with interest day after day as the pattern progresses.

We begin to see the formation of the pattern being

brought to the surface through the development of the background or foundation, and if there is an occasional thread of gold it makes the pattern stand out clear and beautiful; but if the background is dull, then the pattern will be spiritless and characterless, and will lack the coloring that delights.

Ninety per cent of our children are kept on grey backgrounds by men and women who have no idea of child training whatever, and who keep one idea forever before them, viz., THE SALARY, and our children are simply the tools that they work with.

We cannot blame the teacher under existing conditions, for it is simply this: The standard of his or her classes control the certainty of the job, and so they go on with their ramming and cramming useless nonsense into the minds of poor victims, and the result: "Survival of the fittest."

The average child is sent to school at five years; he gets through all the grades; enters high school and graduates at seventeen or eighteen, if his health permits. He finds after the fever of it is all gone that despite his twelve years of hard work he is totally unfit for the battle of life. This is not overdrawn; it is a woeful fact, and the wonder is that such conditions have been tolerated so long.

A child fitted with a good knowledge of the English language, correct reading and spelling, a clearly defined study of civics, and a thorough drilling in debit and credit, also measuration, will make a far better showing than the one harassed with Zenophon, Cæsar and Virgil. Many make a good showing in those useless subjects and fail utterly in the examination of spelling and English.

History is good, but why burden the young mind and dull the edge of perception with pagan history? There is no uplift to the mind of either old or young to study the brutalities of that awful monster, Nero, or the profligacies of his followers. Instead of dragging the young mind into the depths of the catacombs let the child be brought into God's bright sunshine of the present, and let us endeavor to make him understand that now is the time to make the most of life; that he is an individual and is expected to stand on his own responsibility, and the more of the present he can absorb the more able he will be to take care of himself and others. The instructor should inculcate the importance of learning some trade which will yield a competency. The practical knowledge of trade and commerce should be in the every-day curriculum of school life.

We pray for the time when our children will be taught that "industry is king" and the *only legitimate way to live.* As it now is, our boys are fired with the get-rich-quick idea and taught to admire and praise the multi-millionaire pirate, who through wire-pulling and intrigue, is robbing our freeborn American children of their birthright.

Industrial schools for rich and poor alike, under the supervision of men of integrity and unselfishness, who have the interest of the nation's future at heart, would greatly eliminate the conditions as they now exist.

Nowhere would it be felt more than in our colleges. It would give manly dignity to our boys and foster a spirit of independence—a condition much more to be admired than acquiring a knowledge of how to color a meerschaum pipe or being the star halfback or punter in the football quadrangle. It is to be deplored that so few of the parents visit the schools where their children are working out their future. Rest assured, fathers and mothers, that your occasional presence would add greatly to the interest of the teacher in the child and be an unmeasured encouragement to the children. We must needs keep pace with the child by reading and giving him our comradeship so that we may not be considered fossils or know-nothings.

The child is to be pitied who cannot seek comfort and advice at home on the studies of the coming day, and it is our duty as parents to do what we can to unfold at least what we know on these subjects, though it be little.

On the subject of education, Emerson beautifully expresses himself: "Consent yourself to be an organ of your highest thought and lo; suddenly you put all men in your debt and are the fountain of an energy that goes pulsing on with waves of benefit, to the borders of society, to the circumference of things."

Let us, then, take the advice of "Phoenix," put our shoulder to the wheel. **Elizabeth Walkinshaw.**

"A Good Quotation." Here we find Rollin Harris, **the "fluent" representative of the supply firm of Holbrook, Merrill & Stetson, of San Francisco, about to close a car shipment order with one L. M. Miller, a moneyed master plumber** of Porterville, Cal. From photograph by our **Mr.** E. De Forest Winslow.

Building for the Future*

Water Purification and Drainage in the City of New Orleans, La.

(Conclusion)

The Grit Reservoir.

On leaving the Head House the water first enters one of two grit reservoirs. The journey through takes about an hour, and during the course the heavier suspended matter rapidly settles out, there being a noticeable difference in the density of the material deposited at the entrance and at the outlet where the water re-enters the Head House.

Each reservoir is 75 by 150 feet, has outer walls 20 feet high and a maximum capacity of 3,300,000 gallons.

In passing through the Head House from the grit to the lime-mixing reservoirs the water flows through the orifice gates, advantage being taken, as has been explained before, of the difference in head on the opposite sides of these gates to automatically control the discharge of chemicals into the water.

*The first part of this article was published in the issue of October 2.

The head house, filters and filter gallery at New Orleans, La. Note the plain and substantial appearance of the buildings.

The Lime-Mixing Reservoir.

These reservoirs are in duplicate and are 75 by 320 feet each, with outer walls 19 feet high. They are divided by thin partitions, or baffle walls, and an intermediate floor, into 16 rectangular passages, with an area of over 60 square feet each and an aggregate length of about 5,120 feet. When passing 40,000,000 gallons in 24 hours the passage requires about an hour, and the velocity is such that the chemicals and sediments are held in suspension, giving time for the proper chemical reaction to take place before entering the coagulating reservoir. The total capacity of each lime-mixing reservoir is about 2,600,000 gallons.

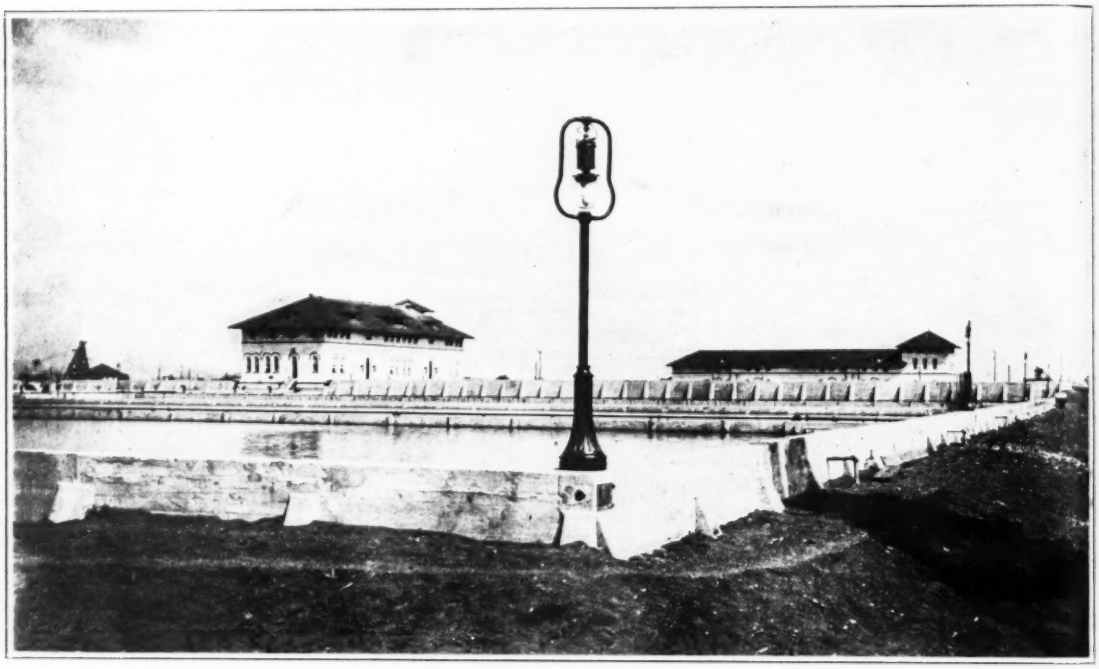
The Coagulating Reservoirs.

These four reservoirs are each about 275 by 325 feet and have outer walls 14 feet high and hold 7,500,000 gallons. Each is divided into halves by a baffle wall, at the end of which it was originally intended to add coagulant. Provision has also been made to add a certain amount of rain water at this point for corrective treatment should an overcharge of chemicals at any time occur. The water is finally passed over a skimming weir, through the lower

passage of the division wall, into the Head House and then through a reinforced concrete conduit seven feet in diameter to the filters.

THE FILTERS.

The filter gallery is a building something like 29 feet wide and 180 feet in length. The lower portion acts as a conduit for filtered water. Above this is the pipe gallery. Above the pipe gallery is the operating floor and above that are the wash water and air tanks. The extreme depth of excavation is on concrete groined arches, which form the roof of the equalizing reservoirs. These are about 6 feet 6 inches deep and hold 866,000 gallons. The weight of the entire structure, including the water, is carried on piles. A settled water passage extends across the rear of the filters, of ample capacity to supply future filters. From this passage the water is led through a riveted steel pipe onto the filters, which are fed through the center gutter. The sand bed is 3 feet thick and has its surface 2½ feet



Filter gallery, head house and coagulant reservoir No. 3 at New Orleans, La.

13 feet below the ground level and 37.5 feet below the center of the wash water tanks. There are 10 filters, five of which are on each side of the building. Each unit has a filtering area of 1,431 square feet, divided into halves by a central gutter 4 feet wide, and has eight lateral wash water gutters, 6 feet 7½ inches center to center, across each half. The gutters, 16 inches wide, are made of cement mortar reinforced and have sloping bottoms 15 to 21 inches deep. They have proven of ample capacity. Each filter is 53 by 31 feet inside. The walls are 12 inches thick and 12 feet high. The filters are open on top, except for the cross walks, which are utilized for tying in the walls and making them stable. Each filter was cast at one pouring, which was accomplished in a single day. The filters are supported below the crest of the wash water troughs. All filter sand was taken from Horn Island and has an effective size of 32 to 36 mm., and a uniformity coefficient of about 1.65.

A brass screen, made of No. 20 wire, 10 meshes to the inch, separates the sand layer from the gravel, which is placed in four different layers in the V-shaped spaces between the concrete ridge blocks on top of brass strainer plates. Under the strainer plates are the laterals that lead the effluent to the pipe system which supplies the controllers. The filter controllers are the outgrowth of studies by Mr. Earl, and the same principles that were applied to the chemical controllers were used. A circular orifice is placed in the bottom of the controller, and the head built up in passing through this orifice is used

as a basis for operating heavy balanced cylinders, which are nearly submerged in water whose level varies as the head over the orifice varies. The controllers can be operated at a fixed rate, but ordinarily they are operated to respond to the pumps and are so regulated that the filters are discharging at their maximum rate when the water in the suction well is at a minimum, and will shut down entirely when the water reaches a certain predetermined maximum level. Their operation has been very

An interior view of the filter gallery, showing operating tables and controlling filters at the Water Purification Station in New Orleans, La.

effective, and, so far as the writer is informed, are the only controllers known that respond to pumps.

In designing the filters it was decided to omit the use of air for washing, and use a larger volume of water than had been previously used. The average wash lasts for about three minutes, and water is passed upward through the sand at about 40,000,000 gallon rate. As this is about double the rate of delivery, from any of the high lift pumps, or equal to the full capacity of a low lift pump, it was impracticable to supply wash water at the above rate from any of the pumps in constant service. To meet the needs of the situation two large steel tanks, holding about 120,000 gallons, were erected on beams in the filter gallery. These tanks are filled by water from the distribution system, which is passed through a 10-inch Venturi meter which registers each wash on a recording chart. The wash water tanks are made strong enough to withstand the full pressure of the large pumps and when empty contain about 16,000 cubic feet of air, which when they are filled is compressed into a smaller tank supported by the roof trusses above. This air is supplied to the head house, where it is used for agitating the iron and soda solution; and it is planned to admit it back into the wash water tanks through a reducing pressure valve to boost up the pressure in the wash water, but satisfactory results have been obtained without its use.

The filters have been operated at from one-half to three-quarters their rated capacity, although they have been tested at all rates, from zero to above the normal, with satisfactory results. Runs of from 40 to 50 hours between washings have been made without showing any deterioration in the quality of the effluent. For three months about 2½ per cent of wash water was used, though sometimes it was less.

All valves for controlling the filters are hydraulically operated from the filter gallery floor. There are

10 regular operating tables, each containing 5 levers for opening and closing valves, and 5 indicating dials to show the distance that the valves are open; a loss-of-head gauge, a gauge to show pressure in wash water tanks, and a faucet from which samples of filter effluent are drawn. Back of each operating table are the balancing cylinders of the filter controller.

Clear Water Reservoirs.

In order to provide a reserve supply in case of sudden demand, there are two clear water reservoirs, covered to prevent the growth of algæ. They occupy the best portion of two city squares and hold about 7,500,000 gallons each. The roof is of elliptical groined arches, supported on concrete columns 12 feet on centers, and the side walls are arched to take the thrust of the roof. The reservoir walls are reinforced on the outside with an earth embankment, having a 2½ to 1 slope, and their tops are covered one foot deep with earth. There is a 48-inch main connecting the reservoirs with the suction well, and the 20,000,000-gallon centrifugal pump used for filling the reservoir. Connecting with the main at one end of the suction well is a 48-inch balanced relief valve that, when the water in the well drops below a certain elevation, will automatically open and allow water from the reservoir to enter the well, and when its normal level is again reached will automatically close.

For the information and the illustrations contained in this article the writer is indebted to the kindly assistance of Mr. F. S. Shields, Secretary of the New Orleans (La.) Sewage and Water Board, and to articles written by Mr. J. W. Armstrong, Engineer in charge; also to Mr. A. B. Wood, Mechanical Engineer, and Mr. Alfred Raymond, General Manager of the Drainage Operating Department.

A partial view of plumbing fixtures in the beautiful showroom of R. S. Kooser at San Jose, Cal. In the very heart of the famous Santa Clara valley, eighty feet above the sea level. San Jose's situation for beauty, fertility and healthfulness is unsurpassed. Photograph by our Mr. Winslow.

Teach Your Customers How to Save Coal in Running Heating Plants

By Charles B. Starkey

With the ordinary householder in the northern climate coal bills are a nightmare, and disagreeable in the extreme. Perhaps a few hints of a practical nature, drawn from experience and observation covering several years, may be of assistance in saving the consumption of an unnecessary amount of coal, and so the following points are given for the benefit of all. In a previous article I discussed "Heat Regulators," but this article has to deal with several points which should be considered.

Many heating jobs are not being run to the best advantage because of THE INDIFFERENCE OR LAZINESS OF THOSE WHO HAVE THEM IN CHARGE, and also because the jobs are not installed to the best advantages.

The Boiler too Small.

One very common mistake is to PUT IN A BOILER WHICH IS TOO SMALL. The house heating boiler should be capable of carrying anywhere from 35% to 50% more radiation than is connected to the system. If this is overlooked the fire will have to be attended to every few hours at an unnecessary expenditure of coal and labor.

Chimney too Small.

The chimney should be of a size sufficient properly to carry the boiler. This point is many times neglected and the area of the boiler's smoke pipe in square inches is greater than the sectional area of the chimney. SUCH A JOB WILL NEVER WORK WELL. The boiler simply cannot generate steam quickly and may NEVER RAISE STEAM ENOUGH TO FILL ALL THE RADIATORS. I remember one place where this very point was overlooked, and when the installation was tested out it was found that the boiler could not raise a single pound of steam. The chimney was enlarged at a considerable expense and the job then tested; the result showing that the boiler easily carried a pressure of three pounds which was sufficient to heat the building.

Keep Boiler Clean.

The boiler should be kept free from ashes and soot, as the efficiency of any boiler is reduced materially by not being clean. Do not wait until the gas and smoke fairly drive you from the house. The boiler should be cleaned, as often as once in two or

three weeks during the winter season, if the best results are to be obtained.

Run a Deep Banked Fire.

In the ordinary heating boiler a deep banked fire is best from every point of view. It will hold the steam longer, require less attention and consume less coal.

The writer has proved this many times by measuring out the coal and burning it both ways, viz.: a shallow fire, and a deep banked fire. The coal should be spread evenly and the fire pot filled. When it is fired properly and the gas passed off, bank the fire with cinders, screenings or pea coal. On jobs where no heat controller is used, the dampers should then be nearly closed and the boiler will hold the steam from eight to fourteen hours. This has been tested out and proved too many times to admit of discussion. The reason for an extra damper in the smoke pipe on such a job is that the draft may be too strong and allow too much heat to escape up the chimney which fact is true in many installations in spite of claims to the contrary by various authorties.

Have Boiler Near Chimney.

The boiler should be located as near the chimney as possible. This gives a shorter smoke pipe which is an advantage in many ways. It costs less to replace, is easier to take down, there is less danger from fire, and the chances are greater for a better draft.

Cover all Mains.

The boiler and mains should be properly covered. I have always believed that it is a good practice to brick in the heating boiler with a double wall. To be sure this is an extra expense that many contractors hesitate to figure on when the competition is keen; but I have observed many heating jobs with brick set boilers, and I have generally found that the amount of coal consumed was surprisingly small when the size of the house was considered. When the boiler is set in brick it should be enclosed in a double wall; a hollow space of at least two inches being left between the walls and the top of the boiler covered with plastic asbestos.

Put Radiators Where They Will Have to Work.

The radiators should be placed where they will condense the most steam.

This means that a radiator placed on, or along, an outside wall does better work than if located on the inside wall of the same room.

This point is generally well understood by the trade, but frequently its application is neglected many times through other reasons than the improper arrangement of the rooms, windows or doors.

Burn Right Kind of Fuel.

Both boiler and fuel should be adapted to each other. Do not burn hard coal in a boiler that was constructed to burn soft coal, nor vice versa.

Manufacturers for several years have spent large amounts of money in experimenting and producing boilers to meet different fuel demands, and it is a safe bet that you can not improve upon their results.

Keep Boiler Out of a Pit.

No boiler should be dropped into a pit when it can be avoided. To place a boiler below the cellar level subjects it to the following:

1. It will, to a certain extent, cut off and reduce the draft.
2. It places the fire in a position where it may be put out by water in the fall and spring of the year if the cellar is partially flooded.
3. It makes extra steps in attending to the fire.
4. In case it is necessary to repair the boiler, it is more difficult to get at when in a pit, than when upon the floor of the cellar.

Fire Regularly.

A regular hour, both morning and evening, should be established for attending to the fire. Twice a day should be enough for any properly constructed house heating job.

Proportion Radiation Correctly.

A sufficient amount of radiation, only should be used to heat the rooms according to the weather. This means that the wind should be tempered to the shorn lamb, so to speak.

Use But One Radiator in a Room.

It is unnecessary to run two radiators in a room, for an hour or two and then shut down the boiler only a couple of hours later to turn on the drafts when the room grows chilly. The proper way to do is to cut off the extra radiator and run a uniform fire in the boiler which will furnish steam enough only to heat the radiators which may be working. The less the fire is shaken and poked and interfered with, the less coal it will consume.

Temperature Regulators Useful.

This is the point where a temperature regulator is of use as it does away with any adjustment by hand and can be set to perform its work at a wide range of temperatures.

Let One Person Run the Plant.

Nearly every person in the household, after the

first season is of the opinion that he or she can run the heating plant properly, but the chances are that one only is capable of doing it right, and if two or three are constantly meddling with the fire, the house is cold half of the time, w hile the coal pile suffers from the frequent demands made upon it.

Don't Throw Coal Away.

On a small job, the amount of coal thrown away uselessly in this manner frequently amounts to two or three tons during the season, which means anywhere from twelve to twenty-four dollars lost through carelessness or ill temper, and also that both the boiler manufacturer and the man who installed it will be blamed for matters which are certainly entirely beyond their control.

Use Common Sense.

So it comes down to a point of using common sense in managing the heating apparatus, and many times when the coal bills amount to a sum unreasonably large, the direct cause is to be found in the CARELESSNESS OF THE MAN WHO IS SUPPOSED TO MANAGE THE APPARATUS.

The House Sewer

By Phoenix.

The portion of the plumbing system, known as the house sewer, has received some attention from the trade newspapers, of late, and for that reason I desire to say a few words on the same subject.

Some of the articles written were practical and to the point, while others seemed to deal more with theory.

That part of the sewer which runs from the outside of the cellar wall to the main sewer receives but scant attention at the hands of many plumbers who will, aside from this particular portion of the installation, put in a first class job. It seems to be almost a foregone conclusion that any person can lay sewer pipe, and so instead of putting a man who can be depended upon at this job, it is the custom in many places to intrust the laying of the tile to a common laborer who will throw it in any old way to earn his $1.50 or possibly $2.00 a day. This is more than likely to prove a most expensive mistake, for the house sewer controls the disposal of the sewage from the house or buildings and if this sewer fails to work properly, it will surely put the whole plumbing system out of business, until it can be repaired. When the source of trouble is finally located it is frequently found to be a matter that would have been covered, if done right at first, by an expenditure of from two to ten cents and a careful, well paid man who knew his business, would have had common sense enough to have laid out that dime for his employer, knowing full well that it would save anywhere from five to twenty dollars, or more, at some time in the future.

In passing let me digress. I have observed the statement that the cast iron house drain should be hung, horizontally and properly supported from the cellar joists in the building, and that when so put in, it constituted the best practice.

I certainly fail to agree with such a practice for at least three very excellent reasons:

1. If so put in and there is a large amount of cold water constantly passing through the pipe, as is the case in the larger buildings, this pipe will "sweat" in the summer time, and every one knows that a sweating pipe is a nuisance.

2. A pipe exposed in such a fashion more easily transmits the noise of descending running water. Stand in any cellar and listen to the water from a discharged closet passing along a four-inch soil pipe thus exposed, and then compare with a soil pipe which is buried properly under the cellar bottom, and judge for yourself.

3. Many times the cellar is six feet, or less, in height and the four-inch pipe run in such a manner is greatly in the way. It is also unsightly and makes unnecessary piping in the cellar and in a modern house it should be the practice to get all the piping out of sight, when it can be done in a manner that will not interfere with correct sanitary practice and safety. The chances are that not one drain in five hundred is going to stop up at any point along the run where it would be slung from the joists or buried under the cellar floor.

It might fill up, but the difficulty will generally be found at the four-inch trap, or somewhere in the outside drain which leads to the main sewer.

The sewer upon the outside of the building, connecting with the main sewer, should be either of cast iron or vitrified pipe, but not of galvanized iron, as the sewage attacks the point where the ends are to be threaded, causing the pipe to deteriorate and have to be replaced in a very few years.

The most particular pains should be taken in laying this sewer in the best possible manner. It is the key to the whole plumbing system in the building.

It should be of proper size and laid exactly in a straight line if possible. It should have a uniform grade and not consist of a series of irregular rises and depressions.

The uniform grade of the ditch should be fully proved before the first length of sewer pipe goes into the ditch. The overseer or inspector should see to this point, as it is his business to know that the work is done correctly. In newly made ground, or in localities where the earth will freeze or "heave" at the depth at which the sewer may be run, only cast iron pipe should be used.

While the tile drain is being laid, each length should rest upon the ground for its entire length, inclusive of the part which makes the joint.

In order to do this it is necessary to dig deeper the ditch at the bell end of the tile, so as to have room to properly work in the cement at the bottom. This point

is neglected entirely many times with the result that the water leaks out before it reaches the main sewer, and allows the solid matter to be deposited along the bottom of the sewer, and ere long the pipe becomes clogged and must be dug up and cleaned out at a considerable expense.

If the drain to be laid is a long one, two men can work to more advantage than one, one man in the ditch and the other upon the bank to bring the tile and cement. Various rules and proportions are given for mixing this cement. For my own practice I always used two shovels of first-class Portland cement to three shovels of good, clean, sharp, sifted sand, and found that it worked mighty well. This mixture must not be either too dry or too wet. If too dry, it will shrink in setting and leave cracks from which the water can escape. If too wet it will slide out at the bottom, thus making an imperfect joint. A little practice and observation will enable one to tell, at once, when the cement is of the proper consistency. I observe that some one has suggested the use of **rubber gloves in handling this cement and when working it to its place.**

How that must make the real practical workers and the old timers smile!

No! Use the hands only. The cement will not ruin them, and should the hands feel rough and "streaked" after the days' work is done, if washed clean with any good "mechanics soap" and then rubbed with vinegar, the roughness, soreness and unpleasant feeling will disappear in a short time. After a couple of joints are made, earth should be thrown into the ditch, and tamped down on each side of the tile, to hold it to its place. The man who is making the joints should attend to this and see that the tiles are kept in a perfectly straight line.

Then, before any more tiles are placed, a swab on the end of a pole five or six feet in length should be run down the inside of the pipe to remove any cement which might have worked through the joint. The swab, by the way, should be **left in the sewer pipe** behind the joint which is being made as then any cement which works into the pipe **can be pulled out** and not pushed down into the sewer ahead of the swab.

If it is found that it is impossible to run the sewer in an exactly straight line **never try to change its direction by cramping the joints of straight tile to one side.** This will leave a larger gap on the outside through which the cement will work and make a bad job.

In such a case use tiles that have a gradual bend. Avoid all right angle turns, planning the run and ditch so that a wide curve can be made to arrive at the desired point. At these turns where a stoppage might, at some future time occur, it is a very good plan to arrange for a clean out in which a hose may be inserted and the sewer properly flushed out. A little bit of foresight at such points may be instrumental in saving considerable annoyance and several dollars at some future time. **A rough, cracked, warped or inferior length of tile should never be allowed to enter into the construction of a house sewer.** The inspector, contractor or owner should see that this is carried out absolutely.

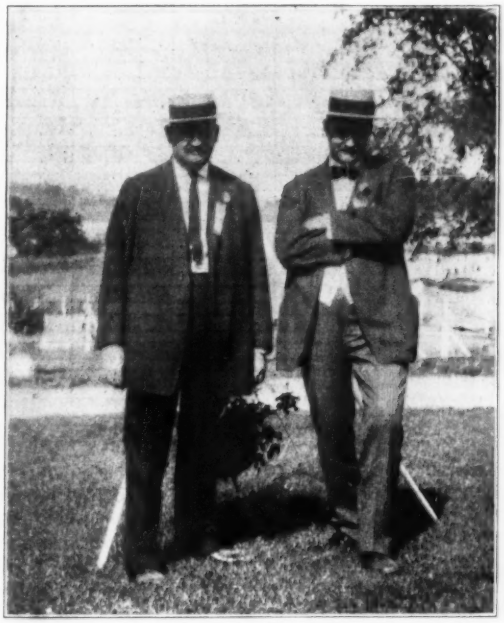
Earthenware sewers are preferable in cases where strong acids are to be disposed of with the other matters which pass through the sewer pipe.

If the sewer is located anywhere near an electric street railway, earthenware sewers should be used in order to avoid electrolysis, which affects sewers constructed of iron pipe.

After the inspector has viewed the sewer it should be filled in properly.

Right here is where a careless man can do considerable damage.

If the earth is composed of gravel in which there are many larger stones, it is very probable that some of these large stones can be thrown in and crack several lengths of tile as the filling progresses along the line. The man who laid the sewer should stay in the ditch and pack the earth around the pipe until it is covered with at least four inches of dirt after which considerable more dirt may be thrown in and then tamped down. It is entirely unnecessary to leave the huge unsightly piled up ridges of dirt along the line of ditch as may be seen almost everywhere. These only cave in at the first rain and are danger points and unsafe to drive over. With care in tamping down, all the earth that came out of the ditch can be worked back and the ground rendered perfectly firm and solid **and it is entirely unnecessary to use any water in the process.** A good ditch man who knows his business will vouch for these statements.



W. H. Crookston & Brother, of New York City, at the recent annual outing of the Bronx Master Plumbers' Association. From left to right they are William H. and Asa Crookston.—From photograph by our Mr. Fundinger.

Cleveland Plumbing Code

This chart shows in a compact and referable form many of the requirements concerning the installation of plumbing under the new Cleveland Plumbing Code. An examination of the chart will show that grouped under the title of "Traps" will be found the subdivisions of plain and resealing traps, and then under these titles are given the requirements of the code as to depth of seal, distance from vent or stack, limit of vertical portion, maximum distance which trap may be allowed from fixture; also information concerning trap cleanouts. There is also shown under the groupings of "Sizes for Fixtures," various sizes of traps which may be used with the different plumbing fixtures. Conditions under which slip joints and unions are allowed are also shown together with the restrictions relating to the use of the drum trap. In the tabular portion of the chart will be found the sizes of pipe, and in the next column the areas of circles, and in the following column two-thirds of the areas of these same circles. This saves a great deal of computation by those who have to know these facts. Under the heading of lead pipe, bends and traps are given the required weight per foot of the different sizes and the maximum sizes allowed, inclusive of bends and traps for branches of wastes and vents. Under the heading wastes and soil stacks, there is given the number of traps of various sizes which count as fixtures, the maximum length allowed in feet to the highest connection for branches and stacks of waste pipe, soil and waste pipe, or soil pipe alone. Under the heading of vent and back vents is given the sizes of vents for the traps of different sizes, the maximum length allowed in branch and main vents and back vents for different sizes, and the maximum number of traps allowed on branch and main vents and back vents. Under the heading of no vent—vertical stack, there is given the maximum number of traps allowed on stack where waste part of the stack is vertical between fixture inlets.

This chart will repay a great deal of study and

DETAILS OF CLEVELAND PLUMBING CODE.

TRAPS:- PLAIN

- Minimum depth of seal. — 2 inches
- Maximum distance from vent or stack — 5 feet
- Three feet of this distance may be vertical — 3 feet

RESEALING

- Fire foot limit - vertical portion may be: — 3 feet
- Ten foot limit - vertical portion may be: — 10 feet
- Must be tested and approved.

DISTANCE

Maximum allowed from fixture — 2½ feet
Is developed length from vent or stack to trap seal
Measured along the centre line of the waste pipe
Allowed in a water closet, pedestal urinal, or
slop hopper from floor to trap seal: — 15 inches
S traps of smaller fixtures — 18 inches
P traps from wall to trap seal — 9 inches

CLEANOUT

Screws must be on the inlet side, or in trap seal, or the top of the cleanout may be on a line with top of waste pipe.
Must be full size of trap up to four inches.
Must be protected against tinsting at the floor line.

TRAPS:-

SLIP JOINTS - Allowed only on fixture side of trap, or on the trap seal.

UNIONS - Must be ground faced and exposed.

SIZE FOR FIXTURES

- Water closet, pedestal urinal, Floor drain, — 3 inch
- Slop sink with trap combined, Yard drain — 3 inch
- Shower bath; Slop sink ordinary — 2 inch
- Urinal trough, Laundry tubs 4 to 6 — 2 inch
- Wash basins, and Laundry tubs Group of 2 or 3. — 1½ inch
- Kitchen or Pantry sinks Hotel or Public. — 1½ inch
- Bath tub, Sitz bath, Single wash basin, — 1¼ inch
- Sinks, Kitchen or Pantry for dwellings or suites, Barbers' sinks, — 1¼ inch
- Refrigerators, Drinking fountain, fountain Cuspidors — ¾ inch
- Safe wastes and drips — 1 inch

DRUM

Must be self cleaning and free from interior partitions and deflectors. The diameter shall not be greater than twice the diameter of the inlet, except that for a bath tub and wash tray a four inch diameter may be used.

SIZE OF P/PE	CIRCLE AREAS. AREAS OF CIRCLES	⅔ TWO THIRDS AREAS OF CIRCLES	LEAD PIPE.- BENDS & TRAPS. WEIGHT PER FOOT Lbs.	MAXIMUM LENGTH ALLOWED INCLUSIVE OF BENDS AND TRAPS FOR BRANCHES OF WASTES AND VENTS.	WASTE AND SOIL STACKS. TRAPS Count As Number Of Fixtures	MAXIMUM LENGTH ALLOWED IN FEET TO HIGHEST FIXTURE CONNECTION Branch	Main	WASTE PIPE MAXIMUM NUMBER OF FIXTURES ALLOWED Branch	Main	SOIL AND WASTE PIPE MAXIMUM NUMBER OF FIXTURES ALLOWED Branch	Main	SOIL PIPE ALONE MAXIMUM NUMBER OF CLOSETS ALLOWED Branch	Main	VENT AND BACK VENT. SIZE OF VENT FOR TRAP	TRAPS Count As Number Of Traps	MAXIMUM LENGTH ALLOWED IN FEET. Branch	Main	MAXIMUM NUMBER OF TRAPS ALLOWED Branch	Main	NO VENT - VERTICAL STACK. Maximum number of traps allowed on stack where waste part of stack is vertical between fixture inlets. 1¼" Inlets Trap	1½" Inlets Trap	2" Inlets Trap	3" Inlets Trap	1¼" Outlets Trap	1½" Outlets Trap	2" Outlets Trap	3" Outlets Trap
1"	.7854	.5236	1½		1			1						1½	1													
1¼"	1.2270	.8180	2½	12"	1			1						1½	1													
1½"	1.7671	1.1780	3½	10"	1			3	3					1½	1	10	20	2										
2"	3.1416	2.0944	4	8"	2	20	40	10	20					1½	1	20	40	12	24	2	2	1		2	2	2		
2½"	4.9087	3.2724			3	35	65	16	32					1½	2	35	65	18	36	3	2	2		4	2	2		
3"	7.0686	4.7124	6	5"	4	50	100	30	60					2	3	50	100	30	66	4	3	2		4	4	2		
4"	12.5664	8.3110	8	2½"	5	75	150	72	144	48	96	12	24	2	4	75	150	99	198	7	5	3	2	8	6	4	2	
5"	19.6350	13.0900				100	200	144	288	96	192	24	48	2½	5	100	200	198	396	11	8	5	3	12	8	6	2	
6"	28.2743	18.8496				125	250	252	504	168	336	42	84	3	5	125	250	300	600	16	11	7	3	16	12	8	4	
7"	38.4846	25.6564				150	300			280	560	70	140							21	15	9	4	22	16	10	4	
8"	50.2656	33.5104				175	350			420	840	105	210							28	19	11	5	28	20	12	6	
9"	63.6174	42.4116				200	400			630	1260	165	290							35	25	14	7	36	26	14	8	
10"	78.5400	52.3600				225	450			800	1600	200	400							43	30	17	8	44	30	18	8	
11"	95.0033	63.3552				250	500			1060	2120	265	530							52	35	21	9	62	36	22	10	
12"	113.0980	75.3986	W.T. Luff,	Cleveland,	Ohio	275	550			1420	2840	355	710							62	43	25	11	62	44	26	12	

will be found to be very useful in studying the code. Other illustrations will be given from time to time of the application of the Cleveland Plumbing Code, and these articles should always be saved and brought together in order that the complete combination may be had of the most important plumbing code ever adopted in the United States.

Questions and Answers

WHERE HE CAN FIND OUT ABOUT AIR-PRESSURE TANKS.

Oakland, Wis.—To the Editor of "Domestic Engineering." Sir:—In the issue of "Domestic Engineering" for October 9, a correspondent signing himself E. E. B., from Grand Rapids, Mich., asks you to recommend some system of domestic water supply that does not require a tank, and to give the name of some one who understands the installation of the system. This correspondent stated that a customer of his intended to build a country home with all modern improvements and did not want the water tank in the attic. I have just installed a system here which I believe to be superior to any which I have ever put in, and if your correspondent will write to me I shall be glad to give him full particulars.

C. A. Bristol.

HOW TO BLOW OFF A STEAM BOILER.

231.—Seattle, Wash.—To the Editor of "Domestic Engineering." Sir: I should be glad if you will have the practical man who writes under the name of "Phoenix" write out a few simple rules for blowing off a steam boiler, so that I can hand them around to be read where they will do the most good. **Pacific.**

It is a good plan to blow off the boiler on a new steam job in a very few days after it has first been fired up.

On old jobs the boiler should be blown off before the fire is started in the fall, and also several times during the winter.

This will keep the water clean and make the boiler steam much easier.

Sometimes an unsteady water line is the result of an accumulation of dirt, oil and grease and will only be stopped by blowing off the boiler thoroughly. In performing this duty it will be well to make note of the following points:

1. The radiator valves should all be closed, which will generate steam much quicker on the boiler.
2. See that the water glass is then about half full.
3. Build up a quick fire of wood and run the pressure up to about fifteen pounds.
4. Then open up the blow off cock, but do not pull the fire yet, as it is desirable to keep the pressure up until the water is all blown off.
5. Dump the fire before it has a chance to melt out the safety plug in the boiler. This must be done as soon as the last of the water leaves the boiler.
6. Open up all the draft doors in order that the boiler may cool down as rapidly as possible.
7. Do not let any cold water into the boiler until you can hold your bare hand upon the flues or fire pot. This is a safe rule to follow.
8. Close the draw off cock and open up the water supply valve, meantime letting the air escape through the safety valve and try cocks on the water column.
9. When the water glass shows about two-thirds full, shut off the water.
10. Build the fire and while the boiler is getting up steam go up stairs and turn on the radiators.

Phoenix.

HOW TO TEST A WATER METER.

235.—Hartford, Conn.—To the Editor of "Domestic Engineering." Sir: Will you please inform me of some method of testing a water meter so that I can tell whether it is correct or not. **H.**

A very simple method is to weigh the water which passes through the meter, a gallon weighing about eight and one-third pounds, and a cubic foot 62.35 lbs. One test should not be sufficient, as the water measured should be drawn slowly for one test, and rapidly for another. Note, in each test, the weight of water you get by actually weighing it, and compare with the weight of water the meter indicates as having been passed, and you are then in a position to judge as to the accuracy of your water meter.

HOW MUCH WATER WILL FLOW THROUGH ANY PIPE IN A CERTAIN AMOUNT OF TIME.

228. Denver, Colo.—To the Editor of "Domestic Engineering." Sir: I wish you would inform me of a simple manner of finding the amount of water that will flow through pipes of various size in any given amount of time, and please explain the rule so that it can be understood. **Waiting.**

A simple manner of getting at this problem is to use the following formula which is in common use and considered fairly accurate.

$$G = \frac{1}{2}\ \frac{(3D)^5 \times H}{L}$$

Now in the above formula the letter G is used to represent the number of gallons which will flow through the pipe every minute. The letter D stands for the diameter of the pipe in inches, while H is the number of feet of head. The letter L represents the length of the pipe in yards.

This formula would work out about as follows: Suppose you desired to find out how many gallons of water would, in one minute, pass through a pipe two inches in diameter, and five hundred yards long under a head of fifty feet.

Now let us take this formula to pieces and work it out.

3 D=6, while $(3D)^5$ would equal 6×6×6×6X6, or 7776.

Then the formula becomes

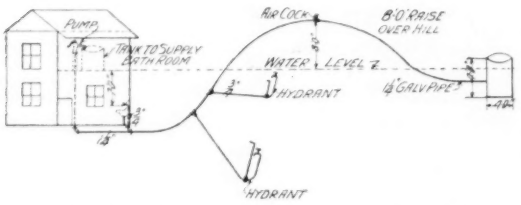
$$G = \frac{1}{2}\ \frac{7776 + 50}{500}$$

Which works out as follows:

7776×50=388,800, which divided by 500 would give 777.6 gallons, and this multiplied by ½ equals 388.8 gallons, which is the answer, and would be sufficiently accurate in most cases where it was used.

WHY DOES THIS SYPHON BREAK?

237.—Landale, Pa.—To the Editor of "Domestic Engineering." Sir: You will see herewith a rough sketch of a syphon which is causing us some worry. When we start the water it will run three days, after which period the pressure becomes weaker and weaker by degrees, until



Sketch of syphon which is causing L. J. trouble.

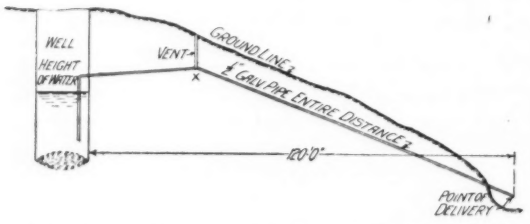
the water stops entirely. We have tested the pipe from point to the spring and find it in perfect shape. Will you kindly tell us what you think causes the trouble?

L. J.

According to the lay-out given in the sketch I should be inclined to believe that the pipe pockets or collects air at the high point marked X. The pipe would not of necessity have to leak air to do this, as there is air in water which would tend to collect at the highest point. As given, there is no means shown for removing this pocketed air. Cut the pipe in two, thread the ends and insert a tee and union and run a pipe to the surface and place an air valve at this point by means of which the air can be removed.

ANOTHER SYPHON GONE WRONG.

238.—Schuylerville, N. Y.—To the Editor "Domestic Engineering." Sir: I take the liberty of enclosing herewith a rough sketch showing a syphon installed, which is causing us trouble, and ask your valuable advise as to why it won't work when the point of delivery is bushed down to ¼-inch outlet. The syphon works well with a full ½-inch stream,



Sketch of syphon which grows tired after working three hours.

but this amount of water drawn lowers the amount in the well a great deal faster than the supply will allow, and when we bush the point of delivery down to ¼ inches, the syphon stops running in about three hours. Will you kindly advise us a remedy for this and greatly oblige a constant reader. **F. C.**

I would suggest placing a vent in this pipe at the point marked X, similar to the manner described in another very similar question which we have answered at length.

WHAT THE LAW CAN DO TO SIMPLIFY PLUMBING.

Seattle, Wash.—To the Editor of "Domestic Engineering." Sir: With reference to article in "Domestic Engineering" for Oct 9, entitled, "What the Law Can Do to Simplify Plumbing," **I want to express my approval of the article as a whole,** and especially of the drawing showing graphically the superiority of the new Cleveland plumbing code over the old one from every standpoint of health and sanitation, as well as **in lessened cost and simplicity of operation.** You are, of course, aware that many good plumbers (but poor sanitarians) will condemn bitterly the use of non-syphon traps and the absence of a multiplicity of vent pipes, but I hope the time will soon come when all will recognize **the sanitary value of a minimum amount of piping** and the use of a size of waste pipe that will be **thoroughly flushed by the discharge from the fixtures.**

I consider the article one of the most, if not the most valuable article that has ever been published in your paper.

After considerable expense and much opposition we have just forced through a partial revision of the Seattle plumbing ordinance, a newspaper copy of which I enclose herewith. You will note that it is far from perfect and does not contain many features that should be required under a modern up-to-date ordinance, but I can assure you that it is an improvement over our old ordinance regulating plumbing. Yours truly,

Wm. E. Holmes.

THINKS IRON FOR HORIZONTAL SEWERS NOT ALWAYS BEST.

Portland, Ore.—To the Editor of "Domestic Engineering." Sir: From the article in "Domestic Engineering" for October 9, by Thos. S. Ainge, I quote as follows:

"Material—It is gratifying to note that in but eight of the cities whose codes are under consideration is earthenware or cement permitted as the material for sewers under buildings. In three of these, earthenware may only be used under certain conditions (but the **wisdom** of permitting the use of such a fragile material for a sewer under any building, no matter what the conditions may be, is not apparent)."

I do not agree with Mr. Ainge that iron is the best for horizontal sewers under buildings **under all conditions.** From personal experience I have found that iron will not do for sewers in soda works, printing works, where linotype or acid is used, also plating works. **The iron will be eaten out in a streak along the bottom, even** when these chemicals are run into a **diluting tank.**

The best sewer for places of this description is terra-cotta, but terra-cotta **sewer should be laid on a cement** foundation. The **pipes should be covered with a coating** of one-half cement and one-half **sand,** at least one inch in thickness, and then incased in concrete at least **six inches** in thickness. **A terra-cotta** sewer laid under the above conditions, **will prove better than iron** for buildings **where chemicals are used.** Even on vertical lines where iron and lead are used the iron and also the lead have been eaten out. **For a vertical line, a composition pipe** is now used for **places as above described.**

I do not write this to criticize, only for the good of the

trade, as when articles appear in a trade paper many are ready to believe that what appears in print is true. Hoping that this will be taken in the spirit in which it is written, I remain, Very truly yours,

Wm. Hey,
Inspector of Plumbing and Drainage.

AN EASY WAY TO BRIGHTEN OLD LEAD PIPE.

226. **Burlington, Vt.**—To the Editor of Domestic Engineering." Sir: I frequently have requests to clean up and brighten old lead pipes from parties who do not wish them painted. Can you tell me the best manner of doing this work? READER.

Wipe all the dust and grease off the pipe with an old rag. Then rub the pipe with fine sand or emery paper, being sure to rub lengthwise and not crosswise. After the pipe has thus been thoroughly polished it should be given a coat of shellac and it will look nearly as good as new—minus the dents.

Live Suggestions

Hold Shop Meetings.—Why do political leaders want to address men in the shop at the noon hour?

If the plan is good for them its **good for you.**

Inaugurate shop meetings. Choose the most convenient hour for the employes as well as yourself. Do not let all the sacrifice of time fall on their shoulders. Arrange to hold them weekly. Have everybody there. Let the purpose be to inspire the staff.

Charles T. Root says:

"If you wish to inspire you must be inspired yourself. Enthusiasm is catching, and so is its opposite. The head of the concern has got to be clear as to its objects, to feel confident that they are worth while to his constituency, and that his outfit is adequate to their accomplishment. If he is thus saturated wih a subject, his people will feel it, and will share his confidence.

Have a definite program laid out in advance. Select a subject for discussion. Choose a person to lead off and one to follow and be sure they say things which will make everybody want to talk. Let the typist tell where she thinks the rest of the force can improve the tone of the business. Wherever any member of the staff sees a wrong condition let him knock it hard; whenever any one sees a right idea let him boost.

Team work between little groups is all right, but if you do not, by general staff meetings, solidify it into crew work, it may develop into a selfish clan spirit, detrimental to the general welfare.

Let a clear and common understanding of your purposes and policies get grounded in the minds of your staff through regularly held shop meetings.

Collecting Accounts.—That portion of your work done for business houses and factories ought to be collected promptly and easily. Such firms are trained in business and understand its customs better than do individuals who have work done in residences and flats. To persons who are trained to business ideas, a slight discount for payment within ten days will frequently bring a settlement for a bill which, without such an inducement might go unpaid for two or three months. We bought a little bill of supplies on the fourteenth of the month and the invoice had the customary "net cash" terms printed on it, also, as though to emphasize the fact that the bill was net, there was printed on it "No cash discount allowed." However, below the description of the item, impressed by a rubber stanmp with dating attachment, was this:

> **Two per cent cash discount allowed on this invoice if paid on or before Oct. 25, 1909.**

The use of such a stamp on your invoices might make your collections prompter.

Is Yours a Wet Town?—Are there any number of buildings in your town which collect water in cellars during severe rain storms? In Chicago, a flat town, with little fall to its sewers, a quick, severe rain deposits too much water to be carried away rapidly enough, and thousands of dollars in damage is the history of each such rainfall. Almost every town has a district in which such damage is done. A live wire in the plumbing business will get the agency for an automatic cellar drainer; get some literature describing its absurdly low cost when compared with its great utility, and, before the season of torrential rains is on, have a number of letters all prepared, sealed, stamped and addressed ready to drop in the mail box on a minute's notice. Then when one of those cellar filling rains is in progress, mail those letters to persons whose cellars you know will be flooded. They will arrive at the right time, and you will be busy installing cellar drainers.

Have a house to house salesman.—Seldom does a plumber or steamfitter solicit business. He usually waits for business to come to him. I know a printer who lives in a district in which changes in the sewers recently caused the sewage to back up into his cellar. Knowing "Domestic Engineering" he looked up back water traps, selected one and had a plumber install it. So satisfactory was its operation that his neighbors began to want them. In a few weeks he sold over forty back water traps to neighbors. Now why, by all the shades of Alexander T. Stewart, did not the plumber know enough to canvas that neighborhood and sell those traps? A gentlemanly, bright young felow can be sent about from house to house and he will bring in much business.

A Lay Matter.

"Would you like the floors in mosaic?" asked the architect.

The Springfield man looked dubious.

"Would you like the floors in mosaic patterns?"

"I don't know so much about that," he finally said. "I ain't got any prejudice against Moses as a man, and maybe he knew a lot about the law. As regards laying floors, though, I kinder think I'd rather have them unsectarian."—Harper's Weekly.

EASTERN SUPPLY HOLDS ANNUAL MEETING

C. R. Schmidt resigns as vice-president of the Central Foundry Company.

Chicago Plumbing Supply Bowling League enjoys its first night on the alleys.

ANNUAL MEETING OF THE EASTERN SUPPLY ASSOCIATION.

The annual meeting of the Eastern Supply Association was held at the Hotel Astor, New York City, on Wednesday, October 13. The meeting was called by President Beecher at 2 p. m. in the beautiful college room and for four hours thereafter matters of more or less importance to the members were discussed.

The attendance was a great deal better than expected. Among other things the election of officers for the ensuing year engaged the attention of those present. It will be noticed that all officers were re-elected with the exception of one member of the board of directors. John Mitchell enters upon his initial term on the board. The result of the election follows:

President, P M. Beecher, Syracuse, N. Y.
First Vice-President, John A. Murray, New York.
Second Vice-President, F. H. Locke, Boston, Mass.
Treasurer, F. A. Bucknam, New York.
Secretary, Frank S. Hanley, 261 Broadway, New York.

Board of Directors: P. M. Beecher, John A. Murray, F. A. Bucknam, J. P. Fell, Buffalo; John Mitchell, Washington, D. C.; J. McClure Chase, Philadelphia; John McPhail, Baltimore; Walter Walls, Philadelphia; W. L. Blake, Portland, Me., and G. R. Adams, Rochester, N. Y.

Those in Attendance.

The following is a list of the gentlemen attending the meeting with the names of the firms they represented:

W. R. Stockwell, of Lord & Burnham, Irvington, N. Y.

A. E. Ford and T. B. Reeves, of Ford & Kendig, Philadelphia.

R. H. Mitchell and J. W. Farrell, of Mitchell & Van Meter Co., Philadelphia.

J. F. Cowan, of Standard Sanitary Mfg. Co., New York.

D. Donigan, of Smyth, Donigan Co., Brooklyn, N. Y.

R. G. Williams, of Stanley G. Flagg & Co., Philadelphia.

W. R. Blake, of W. R. Blake & Co., Portland, Me.

John Reid and E. Hammann, of J. L. Mott Iron Works, New York.

S. Watts Bowker and J. P. Donohue, Central Foundry Co., New York.

John McPhail, of The James Robertson Mfg. Co., Baltimore.

John McClure Chase, of The R. C. McClure Co., Syracuse, N. Y.

Marks Lissberger and Milton L. Lissberger, of Marks Lissberger & Son, Long Island City.

Wm. M. Allen, of the McCambridge & Cooper Co., Philadelphia.

Frank H. Locke, of Locke, Stevens & Co., Boston.

J. W. Lyons, of Keystone Pottery Co., Trenton.

Rollin C. Wilson, of Trenton Brass & Machine Co., and Western Brass Mfg. Co.

H. Romeyn Smith, of A. D. Mfg. Co., Detroit.

John A. Campbell and W. J. Bapst, of Trenton Potteries Co., Trenton.

W. D. Gowdy, of Monument Pottery Co., Trenton.

W. B. Dale, of Street & Kent Mfg. Co., Chicago.

Samuel Lederman, of New York.

C. W. Fell, of W. A. Case & Son Mfg. Co., Buffalo.

A. M. Maddock, Jr., of Thomas Maddock's Sons Co., Trenton.

W. S. Gibbs and F. H. Boardman, of Ronalds & Johnson Co., New York.

J. D. Duryea and B. O. Tilden, Colwell Lead Co., New York.

C. K. Sanborn, of Bay State Brass Co., New York.

L. H. Birdseye, of Chas. Millar & Son Co., Utica, N. Y.

C. W. Rainear, of C. J. Rainear & Co., Philadelphia.

J. A. Machado and A. S. Hills, of The Haydenville Co., Haydenville, Mass.

R. W. Reid and T. C. R. Horsfield, of Reid Brass Mfg. Co., Brooklyn.

E. S. Thompson, of Haynes-Thompson Co., Philadelphia.

L. S. Rothwell, of American Pin Co., Waterbury, Conn.

T. K. Ober, Jr., of Kitson Co., Philadelphia.

Walter Walls, of Walls, Owen & Stambach Co., Philadelphia.

Thomas F. Cushing, New York.

A. I. Laing, of Humphryes Mfg. Co., New York.

G. E. Keenen, of Bayonne Supply Co., Bayonne, N. J.

J. E. Zimmerman and J. H. Mueller, of Standard Tank & Seat Co., Camden.

W. D. Haviland, of Spencer & Haviland, Brooklyn, N. Y.

H. H. Sommer, of American Plumbing Mfg. Co., Brooklyn, N. Y.

B. Schutz, of B. Lissberger & Co., New York.

John A. Murray, New York.

C. T. Bennett, Syracuse, N. Y.

John Mitchell, Jr., Washington, D. C.

F. A. Bucknam, of Nason Mfg. Co., New York.

A. H. Warner, of E. Stebbins Mfg. Co., Springfield, Mass.

Henry Stein, New York.

W. W. Thorndike, representing Concord Woodworking Co., Concord, N. H. and F. W. Webb Mfg. Co., Boston.

L. O. Koven, of L. O. Koven & Brother, New York.

P. H. Seaver, of Lincoln Iron Works, Rutland, Vt.

H. B. Hallett, of John Wood Mfg. Co., Conshohocken, Pa.

G. R. Adams, of Samuel Sloan & Co., Rochester.

L. H. Casher, of Hunting Co., Watertown, N. Y.

John Weekes, of John Weekes & Son Co., Watertown, N. Y.

J. Harvey Borton, of Haines, Jones & Cadbury Co., Philadelphia.

Howard T. Gates, of McCrum & Howell Co., New York.

C. W. Frau, of John Simmons Co., New York.

W. B. Tomlinson and A. A. Tomlinson, of Virginia-Carolina Supply Co., Norfolk, Va.

F. W. Bamford and W. B. Maddock, of John Maddock & Son, Trenton.

D. L. Hamill, of D. L. Hamill Co., Buffalo.

H. Owen Allyn and T. H. Hutchinson, of Cahill Iron Works, Chattanooga, Tenn.

O. J. Saxe, of Dalton-Ingersoll Mfg. Co., Boston.

W. C. Matlack, of Potteries Selling Co., Trenton, N. J.

J. Chas. Parry, of Standard Sanitary Mfg. Co., Philadelphia.

Dixon & Ballou and Schaefer & Co., of Buffalo.

C. R. SCHMIDT TO RETIRE FROM ACTIVE BUSINESS.

Chas. R. Schmidt, of Baltimore, Md., has resigned as vice-preside nt of the Central Foundry Company, preparatory to his retirement from active business. Mr. Schmidt has been identified with the manufacture of plumbing goods since 1873, and he was one of the pioneers and early advocates of exposed plumbing work; by actually making such goods and making a market for them he did much towards the progress made in that line. In 1884 he began the manufacture of copper-lined closet tanks and closet seats, and in 1888 he invented and put in the market the ejector syphon closet, the features of which have been universally adopted by the potteries making syphon water closets. He was the principal owner of the Phoenix Foundry Co. at Lansdale, Pa., which plant he sold to the Central Foundry Company in 1899. There are very few men in the manufacturing business who had the opportunity of obtaining the knowledge and practical experience in the plumbing goods line which Mr. Schmidt has had. He is an authority in the lines of iron and brass foundry work, brass finishing, manufacture of range boilers, sheet metal and plumbers' wood work. Last March, when the Anniston plant of the Central Foundry Company was destroyed by fire, he rebuilt, without the assistance of any contractor, the foundry, 530 feet by 120 feet wide, and had it again in operation in forty-five days, establishing what may be a world record. He started at the bottom of the ladder and retires as a successful manufacturer.

CHICAGO PLUMBING SUPPLY BOWLING LEAGUE'S FIRST NIGHT.

The Chicago Plumbing Supply Bowling League, which was organized recently as told in this column at that time, rolled its first games on Schindler's alleys, at the corner of Huron street and Milwaukee avenue, Chicago, on Thursday evening, October 14. All the members of the eight teams from as many plumbing supply houses in Chicago, were in attendance, and a most interesting list of games was rolled off. The main honors of the evening were distributed as follows: The high team score of the evening went to the L. Wolff Mfg. Co.'s team, with a score of 850, and the high average of the evening was secured also by that team at 791. C. Gustafson, of the Cameron, Schroth, Cameron Co.'s team, carried off the high individual score at 204, while E. Heinrich, of the Federal-Huber Co.'s team, had the highest average for the three games at 174⅓. The scores of the evening were as follows:

	1st game.	2nd game.	3rd game.
L. Wolff Mfg. Co.	766	850	755
Republic Mfg. Co.	658	632	739
Federal-Huber Co.	722	756	841
Western Plumbing Supply Co.	621	597	649
Cameron-Schroth-Cameron Co.	786	731	795
Illinois Malleable Iron Co.	605	695	678
Davies Supply Co.	606	691	675
Weil Bros.	566	647	652

BUILD LARGE ADDITION TO PLANT.

The Reading Radiator Works, of Reading, Pa., has added a new story to its plant at Front and Green streets in that city. The new addition will be devoted to offices and stock rooms.

WILL MANUFACTURE MACHINERY.

The Cowles-MacDowell Engineering Company, of Chicago, has been incorporated with a capital $25,000 to manufacture machinery and engine supplies. The incorporators are Irving Cowles, Ernest H. MacDowell and Ewald J. Pfeiffer.

MAKE PLANS FOR NEW FACTORY.

The Royal Steam Heater Company, of Gardner, Mass., is having plans drawn for a new factory on North Main street, in that city. The new building will be 32x88 feet, and will be two stories high, with a nine-foot basement. The work of construction will be started as soon as the plans are completed.

INDIANA RADIATOR CO. INCORPORATED.

The Indiana Radiator Company, of Walkerton, Ind., has been incorporated with a capital of $30,000, to manufacture radiators. The incorporators are Timothy Holland, Dixon W. Place, and Charles B. Bentley.

TO DEAL IN PLUMBERS' BRASS GOODS.

The Fielding Brass Company, of Charlotte, N. C., has been incorporated with a capital of $20,000 to deal in plumbers' brass goods and specialties. The incorporators are Walter Fielding and Lawrence Hager, the former will act as president and general manager, while the latter will be secretary and treasurer. Mr. Fielding is from Boston, and Mr. Hager is from New York. The new concern will be located near the Southern railway's depot, and it plans to be ready for business about November 1.

A. T. ANDERSON NOW COMMISSIONER OF A. S. & M. M. A.

A. T. Anderson, of Cleveland, O., has been appointed commissioner of the American Supply and Machinery Manufacturers' Association in consequence of which he has resigned as secretary-treasurer of the National Supply and Machinery Dealers' Associaton, an office

he has filled with honor and credit to himself since the organization of that association. His successor is Thomas A. Fernley, now secretary of the National Association of Jobbers of Wrought Iron Pipe and Fittings.

WILL DEAL IN HEATING SPECIALTIES.

The John P. Ley Company, of New York City, has been incorporated with a capital of $10,000 to deal in heating specialties. Walter Richards, of Brooklyn, is interested in the new enterprise.

REPORT IMPROVEMENT IN BUSINESS.

The Curtis & Curtis Company, of Bridgeport, Conn., manufacturers of pipe cutting and threading machinery, are running their plant at full capacity in all departments and report a decided improvement in business.

WILL MAKE STEAM HEATING BOILERS.

The New York & New Jersey Furnace Company, of Cranford, N. J., has been incorporated with a capital of $100,000 to manufacture furnaces and steam heating boilers and generators. The incorporators are Geo. H. Bates, of Cranford, N. J.; Daniel H. Chinery and John M. Braisted, both of Port Richmond, N. J.

WILL HANDLE NEW YORK TRADE FROM GENERAL OFFICE.

The Galard Company has discontinued its New York office at 31 Union Square, and will hereafter handle its New York trade direct from its main office and factory at 327-341 Sixth avenue, Newark, N. J. John B. Shanahan has recently become associated with the company and is looking after its interests in New York, with headquarters at its main office in Newark.

HAS REACHED THE ACME OF DISTINCTION.

W. A. Myler, treasurer and secretary of the Standard Sanitary Mfg. Co., of Pittsburg, Pa., is, as everybody knows, an enthusiastic golfer, and an admirer of his has addressed to him the following appreciative "pome:"

SOLILOQUY.
(By W. A. Myler.)

I pray you don't scoff
At my liking for golf,
  For I'm fond of a round on the green.
I detest Colonel Bogie,
(He's an arrant old fogie,
  The worst that ever was seen.)

Whenever I see
The ball on the tee
  My heart it is all in a quiver;
I hurriedly seek
My favorite cleek,
  Or maybe my favorite driver.

There are precious few kinks
On the Beaver Club links;
  We've a course that is certainly swell.
Of course when I miss
I am likely to hiss
  And say something very like ———.

BUHL MALLEABLE BUYS WESTERN MALLEABLE STEEL CONTRACTS.

The Buhl Malleable Company, of Detroit, Mich., has purchased all the malleable steel castings contracts of the Western Malleable Steel Company in that city. The Buhl Company will carry on the manufacture of these castings in the Western Company's plant for sixty days until its new malleable steel casting foundry adjoining its own plant is completed. There will thus be no interruption in the manufacture of these products and no inconvenience to those who use them.

NOW IN ITS NEW BUILDING.

The Staten Island Supply Company is now comfortably installed in its new building at Elm court and Richmond terrace, West New Brighton, L. I., N. Y. The building is a fireproof brick structure rising to a heighth of three stories and covers an area of 50x107 feet. The building is equipped with all modern conveniences, including a freight elevator. There are two separate detached sheds in the rear of the building for the storage of steel and bar iron, and for pipe cutting and threading machinery. The company is now handling a full line of heating and mill supplies.

WILL MAKE NEW DIE STOCK.

The Handy Manufacturing Company has been organized to manufacture the "Handy" die stock. The company's factory is located on John street, Bridgeport, Conn., and the executive offices at 71-73 West Broadway, New York City. The active members of the firm are H. S. Ashmun, formerly of the Connecticut Tool Company, of Bridgeport, and Paul Becker, who has been identified with the Armstrong Mfg. Company. Mr. Ashmun is seen daily at the New York office, while Mr. Becker is supervising the manufacture of the company's product at Bridgeport. Both gentlemen are very enthusiastic over the new stock. A few features of it are that it is self locking, self contained, small and compact and with a quick release. Another feature is four oiling spaces, so arranged that the pipe is fed directly opposite the die and may be oiled, with the stock in any position.

DISCLAIM RESPONSIBILITY.

Some time since the following clipping was published in the vicinity of Pittsburg:

No small amount of comment has been created throughout the trade by the reported intention of congress to consider a bill at the next session providing for the enforced use of certain type of steel closet tanks.

Just what shape the contemplated bill will take is not known at present, nor is it known what influences are behind it, but if the matter ever passes the committee stage it promises to create a furore that will echo throughout the country.

At this early stage of things it is somewhat difficult to surmise what reasons the promoters of the contemplated measure intend to advance in its support. Conversation with persons close to the men supposed to be behind the measure shows them to have a world of confidence in the success of the undertaking. From the trend of the conversation it was taken that sanitary considerations will be the base of their contentions.

If this bill is passed it will undoubtedly injure the trade now carried on in the wood, cast iron and vitreous wares.

The Pittsburg Sanitary Mfg. Co., through its president, Geo. H. Bailey, writes us as follows:

"**Pittsburg, Pa.,** October 5, 1909. To the Editor of 'Domestic Engineering.' Sir: The enclosed clipping explains itself. Relative to the same we wish to say that some members of the trade have intimated that we were in part, if not wholly, responsible for the

action referred to in the clipping, although no reference is made therein to any particular person or persons. We will admit that it is exceedingly flattering to learn that the mere mention of enameled steel sanitary ware immediately suggests our firm, but we don't care to have our product injured through our being held responsible for a rumored attempt to force it on the trade. The 'Steel King' tank is our pet product, and we have always been under the impression that its intrinsic merit was sufficient to make it a pennant winner or at least make its competitors hustle, and any time we discover that freak legislation is necessary to sell that product, we will immediately notify the trade of the aforesaid discovery and consign the 'Steel King' to the scrap heap.

"We will appreciate any assistance you can render us in correcting the erroneous impression referred to in our opening paragraph.

"Thanking you in advance for that assistance, we are, "Yours sincerely,

"Pittsburg Sanitary Mfg. Co.,
"Geo. H. Bailey,
"President."

"P. S.—You have our permission to publish this letter in its **entirety.**"

PLUMBING LEGISLATION

WILL SOON EXAMINE PLUMBERS.

Hamilton, O.—John L. Walker has been elected president and L. G. Betcher secretary of the board of plumber examiners, which was recently appointed by the board of public service. The new board will soon be ready to examine applicants for plumbing licenses.

FATE OF PLUMBING ORDINANCE TO BE DECIDED.

Missoula, Mont.—After a year of waiting and discussion concerning a plumbing ordinance, it now looks as if it will be placed upon its final reading and passage or rejection at the next regular meeting of the city council. It is said that the city is in great need of such an ordinance.

WANT RULING OF A HIGHER COURT.

Boston, Mass.—Journeyman plumbers of this city are displeased with the ruling of Judge Burke by which he decreed that any man might do plumbing on his own premises, providing he comply with the ordinances and do the work satisfactory to the city inspector, and they have announced the intention of engaging counsel and carrying the matter to the higher court, to the supreme court, if necessary, to secure a ruling. The union men contend that the new state law regarding the registration of plumbers distinctly prohibits such work being done by unregistered house owners or by any other person not holding a plumbers' license. Thomas L. Pratt, business agent of the union, is quoted as saying: "This talk of a man having a legal right to do work in his own house is merely begging the question. The laws of the state apply alike to men in their own houses or in some other house. None but licensed plumbers are privileged to do the work specified in the new law, which is not a labor measure, but a law to protect the health of the community."

IRON AND STEEL TRADE HAS A GOOD WEEK

So much new business going on the books of the large steel companies that a large amount of raw materials will be needed.

The Copper Market has an exceedingly quiet week.

THE IRON AND STEEL TRADE.

New York, N. Y.—New business going on the books of the large steel companies is heavy and the problem of securing a sufficient supply of raw materials to take care of it is still present, says "The Iron Age." Partly, no doubt, because the trade is growing used to the pace, there is less excitement than was apparent in September. Yet with some producers of pig iron sales for the first half of October have been greater than for that portion of September, when fear of a runaway market was greatest. Satisfaction is expressed that the talk of pig iron importations, and it is largely talk thus far, has acted as a check upon the advance. Beyond the cargo of foundry iron for New England, and that taken by the leading pipe interest for an eastern plant, no actual purchases are reported. The inquiry for 12,000 to 18,000 tons of low phosphorous pig iron for an eastern Pennsylvania steel foundry for next year, which came upon the domestic pig iron market this month, is now before British furnace men also, and has figured in cables of the last week. The buying of pig iron has kept up the last week, and has included some liberal orders from foundries, chiefly for delivery in the first quarter and first half of 1910. A sale of 12,000 tons and one of 5,000 tons of basic iron were made for eastern Pennsylvania delivery in the first quarter of 1910, the former at $18.50, but $19 is now asked.

THE COPPER SITUATION.

New York, N. Y.—Copper prices are ½c per pound lower than at this time a year ago, and unless the market improves in the next two weeks the difference will be 1½c. There is no comparison between October 1908 and October 1909, as regards real business, but what we have gained in consumption has been offset by the increase in production, and while the copper industry as a whole is in a much more prosperous condition, it is not witnessed in the prices current, says "The American Metal Market." About a year ago buyers were beginning to anticipate the elections and their large purchases advanced the market to above 14—this year the buyers are acting more conservatively, and until our statistics show a movement in the right direction we are not likely to have anything but a quiet market. The copper market is cer-

tainly very quiet this week, but as producers are not trying to force their goods on unwilling purchasers there is no alteration in prices.

NEW YORK METAL MARKET, OCTOBER 19.

Copper, Prime, Lake	$13.00
Copper, Electrolytic	12.80
Lead	4.40
Spelter	6.25
Antimony, Cooksons	8.35
Straits Tin	30.50

CHICAGO IRON MARKET, OCTOBER 21.

Lake Superior Charcoal	$19.50- $20.00
Southern, No. 2 Foundry	19.35
Northern, No. 2 Foundry	19.00

October 14, 1909.

Foundry iron was the same as the week previous.
$2 more a ton than year previous.
Copper was the same price as the month previous.
½c less a lb. than the year previous.

NEW YORK OLD METAL MARKET.

New York.—Dealers' buying prices are as follows:

Heavy crucibled copper	$11.50 to	$11.75
Light copper	10.00	10.37½
Uncrucibled heavy copper	11.00	11.37½
Plumbers' cocks and faucets	9.00	9.50
Heavy brass	8.25	8.50
Light brass	6.25	6.50
Heavy lead	4.00	4.10
Solder joints	6.50	6.75
Block tin pipe	28.00	28.50

CHICAGO OLD METAL MARKET.

Chicago, Ill.—Dealers' buying prices are as follows:

Clean heavy copper and trolley wire	$11.75- $12.00
Light copper	10.75
Heavy yellow brass	8.50
Light brass	8.50
Heavy lead	3.90
Tea lead	3.50
Scrap zinc	4.25

ASSOCIATION NEWS

HONOR MEMORY OF R. B. MOODIE.

Cleveland, O.—The Cleveland Master Plumbers' Association at a recent meeting passed memorial resolutions in honor of the late Rolla B. Moodie, of Dayton, O., ex-president of the National Association of Master Plumbers.

CONVENTION DATES.

October 27, 1909.—Annual meeting of the **Central Supply Association,** at the Southern Hotel, St. Louis, Mo.

January 18, 19 and 20, 1910.—Sixteenth annual meeting of the **American Society of Heating and Ventilating Engineers,** in New York City. The sessions will be held in Engineering Societies Building, 29 West 39th street.

March 8 and 9, 1910.—Annual convention of **New York State Association of Master Plumbers,** in New York City.

OBITUARY

A G. Alexander, of Detroit, Mich., an old time plumber and inventor of the "Alexander" plunger closet, and still later engaged in the plumbers' marble business in Detroit, passed away in Grace Hospital in that city on Friday, October 15. To the older generation of manufacturers, dealers and plumbing contractors the name of Mr. Alexander will be very familiar, and to all those who were fortunate enough to possess his friendship, yes, even his acquaintance, the announcement of his passing on will be received with sadness no one could come into personal contact with Mr. Alexander without realizing what a genial and whole-souled man he was; his deeds of kindness and friendship can never be told but they constituted his life. When the National Association of Master Plumbers held its annual convention in Detroit some years ago Mr. Alexander took great delight in extending to all a cordial invitation to visit him at his celebrated "Ben Hur" farm in Canada. This picture of Mr. Alexander, which we are permitted to publish through the kindness of Mr. E. A. Morris, his old time friend, is an excellent likeness of him as we have known him for the last twenty-five years.

The late A. G. Alexander, Detroit, Mich.

MIDDLE STATES

Aledo, Ill.—Detwiler Bros. Hardware Company, of this town, has secured the contracts for the installation of heating systems in the public school at Alexis, and in Mercer county infirmary and jail.

Charleston, Ill.—The White Plumbing and Heating Company has been awarded the contract for the installation of a new heating boiler in the Scherer block, at the corner of Sixth and Monroe streets.

Chicago, Ill.—Carl J. Stein, of 479 State street, has secured the contract for the plumbing of the new Sherman House at Clark and Randolph streets. The contract calls for nearly 700 bath rooms and the consideration is in the neighborhood of $200,000. The plans for this hotel were made by Architects Holabird & Roche, of this city.

GOOD BUSINESS CHANCES FOR GOOD MEN

This department is for the benefit of our readers. If you want to go into business please write us the kind of place you want and the character of the business you are interested in, and we will publish in this column a request for information which may help you to get what you want. If you want to sell your business, please write us a description of your town, the possibilities for business, the stock on hand, and reasons for selling, and we will do our best to find a purchaser for you.

There is a town of seven thousand population, with a good gas plant, water works and electric light plant, with a sewerage system which has been open to the public but two years, where a good plumbing business may be bought. There is a large field for tapping the new sewer system in this town. There is a man who has a fully equipped shop for plumbing and heating and carries about $4,000 in stock, tools and fixtures. From February, 1908, to February, 1909, he did $16,600 worth of business. This year's business will not run so high, but good reasons for difference can be shown. Owner will sell the entire business or an interest in it to an energetic business man. If he sells an interest only, he would want purchaser to take charge of the business department. He has the good will of all the best citizens in the place, and gets the best of the trade. This town is 156 miles from Chicago, in a fine country and there is no place as large within forty-five miles of it, and this gives a chance to get outside work in the smaller towns. Any one interested in this proposition should address "Domestic Engineering," 209-213 N. Jefferson St., Chicago, and refer to "Business Chance" No. 52.

There is a good town in an oil and gas belt, a county seat, where the sewers have been extended to the city limits and new houses are being constantly built, and in this town there is a good plumbing, hot water and steam heating shop, doing also gas fitting, sewer building and carrying a line of gas ranges and lighting goods. There is also on hand a good stock of staple goods, etc. On September 1 the stock and tools invoiced $1,857, without including freight, cartage or packing; and since then the owner has probably reduced the stock about $200. He will either invoice it at actual cost or lump it at $1,400 cash. The owner wants to spend the winter in the south and this is his reason for wanting to sell. If you desire further information about this, please write to "Domestic Engineering," 209-213 N. Jefferson St., Chicago, and refer to "Business Chance" No. 53.

Pekin, Ill.—Carl Lucas has secured the contract for the installation of plumbing and hot water heating systems in Philip S. Ott's handsome new residence. Mr. Lucas also has been awarded the contract for plumbing and heating Mrs. Elizabeth Whiteford's residence in Forest City.

PERSONAL MENTION

Geo. T. Coppins, secretary and treasurer of the Walworth Manufacturing Company, of Boston, was a visitor to the Chicago trade this week.

E. S. Douglass, president of the W. & B Douglass Company of Middletown, Conn., is spending several weeks in Europe on a business trip.

Wm. E. Goodman, of Milwaukee, Wis., the beloved ex-treasurer of the National Association of Master Plumbers, was in Chicago one day this week, and favored some of his many friends in the trade with a call.

PERSONAL POPULARITY AS A SALESMAN'S ASSET.

That a saleman's personal acquaintance with buyers has a great bearing on the volume of his sales is amply demonstrated by the sucess of Ralph Hughes of The Pittsburg Sanitary Mfg. Co., who lately attained fame

Ralph Hughes, of the Pittsburg Sanitary Mfg. Co., Pittsburg, Pa.

as a high jumper, which fame was acquired in the exploitation of the merits of the goods he handles.

Mr. Hughes enjoyed a wide acquaintance in the trade before he pulled off this stunt, which has been given wide publicity in the trade papers and through the medium of some clever advertising matter. There is hardly a master plumber in the country who has not at least heard about Ralph, with the result that he is made the target for a great deal of "kidding" about his athletic prowess. Considering that this kidding has a direct reference to the goods he sells, one can see that Ralph can stand a lot of it.

While he has always been connected with the plumbing trade, it is not known just when he first became interested in closet tanks, nor was it known that he excelled as a high jumper until recently. The average

plumber man was satisfied if he could jump as high as the bills he rendered, which was some jumping.

So when the subject of this little sketch came along and showed some new curves in the vaulting line the trade sat up and in solmn conclave assembled, decided that this person and his wares were worthy of notice. All of which goes to show that a wide-spread acquaintance with his personality is as good for a plumbing supply man as it is for stage and baseball stars.

Charles C. Bittner, formerly a member of the sales force of the Standard Manufacturing Company, of Pittsburgh, Pa., and later identified in the same capacity with the Kelly & Jones Company, also of that city has severed his connection with the latter concern and is now a member of the sales forces of the Harris Pump & Supply Company. He will call on the plumbing trade in the Pittsburgh territory, as has been his custom in the past.

P. Nacey, president of the plumbing company which bears his name, at 501 State street, Chicago, has purchased the three-story and basement building at 503 State street, adjoining his plumbing establishment. The lot has a front of 20 feet with a depth of 138 feet. The consideration was $27,500. Mr. Nacey now has a holding of 40 feet frontage at this point. While it is said that no definite plans have been made regarding any changes in the property, it is understood that a modern building covering the entire forty feet will be erected.

NEW YORK NEWS

Binghamton, N. Y.—W. B. Hillygus has purchased G. W. Vosburg's interest in the Chenango Valley Heating Company's business at 209 Chenango street.

New York, N. Y.—The John W. Cooney Co. has moved its offices from 355 West Twenty-sixth street to The Hudson Terminal Building on Church street.

Brooklyn, N. Y.—Rogers & Meyers, of 415 Tompkins avenue, have the contract to install the plumbing and heating in the new convent of the Lady of Victory here.

Brooklyn, N. Y.—William Eierman, of 1981 Fulton street, has contracted to install the plumbing in a row of apartments houses on Sterling place for the Harris Building Company.

Brooklyn, N. Y.—The well known firm of McEnaney & Cathers, who has been doing business at 153 Division avenue for a number of years, has been dissolved. Thomas McEnaney has purchased the interest of his partner and will continue the business at the old stand.

Brooklyn, N. Y.—John Gannon, of 383 Bridge street, has secured a bunch of good contracts, among which are the plumbing in the new Lehrenkrauss office building, the plumbing in a residence for Samuel Klein at Utica avenue and Eastern Parkway, and similar work in Frederick Loeser's new building on Bond street, and Kelley & Sons factory on Fortieth street.

Brooklyn, N. Y.—George B. Lewis & Son, of 680 Fulton street, will install a new plumbing system in J. Rodger Maxwell's residence on Eighth avenue, the plumbing in H. J. Pratt's residence on Clinton avenue, similar work in the addition to M. J. Dolphin's residence at 276 Berkley place, and a new system in the Pratt Institute Gymnasium.

NEW JERSEY

Elizabeth, N. J.—The Apgar Plumbing & Heating Company has been incorporated with a capital of $10,000. The incorporators are Andrew M. Apgar, 201 Murray street; Nathan A. Apgar, 1171 Mary street; John F. Rogge, 1169 Mary street, all of this city.

Newark, N. J.—The largest heating contract let in this section in some time has been awarded to Baker, Smith & Co., of New York City. This will be installed in the new building for the Prudential Insurance Company. The contract price for the heating, exclusive of the engines, is $400,000.

SOUTHERN NOTES

Macon, Ga.—Alexander & Luquire Plumbing & Heating Company, of 212 Cotton avenue, has secured the contract for the installation of a plumbing system in the new county jail, which is now in course of construction.

Asheville, N. C.—J. C. Cauble and F. M. Lindsey have purchased the Union Plumbing Company at 7 South Lexington avenue and will conduct the business in the future. The new owners will retain the same name for the establishment as heretofore.

Dublin, Ga.—H. M. Kirke, of this town, has been awarded the contracts for the installation of steam heating systems in William Pritchett's residence here and in Warthen College at Wrightsville, Ga. Mr. Kirke also secured the contract for plumbing and heating the Ben Hill county court house at Fitzgerald, Ga.

PENNSYLVANIA

Williamsport, Pa.—The Sanitary Committee of the city council has decided to recommend that an appropriation of $200 be made to pay for the preparation of plans for a sewage disposal plant.

Bradford, Pa.—Geo. C. Bratton, now nicely situated in his beautiful new shop, has a good contract under way for the heating installation in the Central fire house here. He also has contracted to place the heating in the Holder block, at Smithport, Pa.

Pittsburg, Pa.—The American Warming and Ventilating Company, of this city, has been awarded the contract for the installation of a heating and ventilation system in the new annex of the High School building at Washington, Pa. The consideration is $6,250.

PLUMBERS GET SHORTER HOURS.

Newark, O.—The master plumbers of this town have granted the journeymen plumbers an eight-hour day with the same pay as they received for nine hours. The journeymen will, however, finish all work contracted for up to this time at the old scale.

NOTES FROM THE WEST

Grand Island, Neb.—The Kelly Plumbing Company has been awarded the contract for the plumbing in the $20,000 restaurant building which Mayor Schuff will erect here this winter.

Hutchinson, Kan.—Holbrook & Martin, of Atchison, Kan., have secured the contract for the plumbing and sewerage system in the new high school building in this city. The consideration is $7,067. Lewis & Kitchen, of Kansas City, Mo., have secured the contract for heating and ventilating at $17,544. The new building is to be completed in August, 1910.

THE GREAT NORTHWEST

Green Bay, Wis.—Martin & Wigman, of this city, have been awarded the contract for the installation of a heating system in the district school building at Luxemburg, Wis.

Burlington, Wis.—The Burlington Heating Company has been incorporated with a capital stock of $2,000. C. B. McCanna, Louis H. Rohr and C. Ray McKenna are the incorporators.

Racine, Wis.—H .Raymond has been awarded the contract for the installation of a heating plant in the new No. 3 Fire Company house on Sixth street. The consideration is $945.

Laramee, Wyo.—W. H. Inman, of this city, has secured the contract for the installation of an up-to-date plumbing system in the state normal school building, which will be erected here during the next twelve months. The consideration is $3,930.

Milwaukee, Wis.—The W. A. Bowers Heating Company has been awarded the contract for installing a heating system, together with plumbing and incidental equipment in the new $20,000 power house and central heating plant at the Normal school at Stevens Point. The consideration is $5,493. Van Ryn & DeGelleke, of Milwaukee, are the architects.

PACIFIC COAST

CAUSE OF SANITATION ADVANCED THROUGHOUT CALIFORNIA.

San Francisco Cal.—One of the most gratifying results that has followed the agitation of last year in regard to a state plumbing law has been the fact that many communities have been aroused to the deplorable state of sanitary conditions to the extent that they have passed plumbing regulations without being compelled to by a state regulation. This is just the result aimed at by the State Master Plumbers' Association, which fathered the bill that succeeded in passing the state senate at the last meeting of the legislature, but which was killed by the action of the Governor. The Master Plumbers' Association believes, first of all, in securing the enactment of local plumbing laws through the arousing of public sentiment, but realizes that it is almost impossible to get all communities aroused to a proper sense of duty, and thus favored the enactment of a law that would compel towns of over a certain size to enact sanitary regulations to the satisfaction of the state officials. During the past year a number of towns have enacted such regulations and the number of sewer bond issues that are now being floated by various towns throughout the state indicate that the movement toward sanitary regulations and improvements is widespread. There is still a great deal of room for improvement and it is to be noted that it is the old established towns that have not as yet felt the need of making these improvements. In some of them sanitary conditions are in a frightful shape and it is felt that to arouse the inhabitants of these places to a sense of duty would be a task of too long duration. Hence the move toward state regulation. Just what will be done toward securing the passage of a state plumbing bill during the coming session of the legislature has not been decided upon, but the success that was met with last session is very encouraging and the agitation will probably be kept up.

Riverside, Cal.—Potter & Knight have been awarded the contract for the plumbing and heating in the new Reynolds block on Main street.

Palo Alto, Cal.—The firm of Cashel Bros., of this city, has been dissolved and William D. Cashel has disposed of his interests in the business to E. P. Cashel.

Master plumbers and master steam-fitters are earnestly requested to send us reports of the award of plumbing and heating contracts of $1,000 or more, as soon as these have been awarded, while the information has news value. Kindly address: Editor "Domestic Engineering," 209-213 N. Jefferson street, Chicago.

BLANK FOR REPORT

—OF—

Awards of Heating or Plumbing Contracts

(Cut out, fill in and mail promptly)

DOMESTIC ENGINEERING
Chicago

We have been awarded the

Plumbing Contract_____

Heating Contract_____

Kind of Building_____

Amount of Contract_____

Owner's Name_____

Architect's Name_____

Address_____

Our Own Name_____

Address_____

THE OFFICE BOOKSHELF

Sanitary Engineering, a practical treatise on the collection, removal and final disposal of sewage and house refuse, and the designing and constructing of works of drainage and sewerage; with numerous hydraulic tables, formulæ and memoranda, including an extensive series of tables of velocity and discharge of pipes and sewers. By Colonel E. C. S. Moore, R. E., third edition, revised and in part rewritten by E. J. Silcock, M. Inst., C. E., etc.; in two volumes. Published by the J. B. Lippincott Company, Philadelphia. The two volumes contain 874 pages and 494 illustrations, plates, maps, etc., 9¼x6¼ inches, cloth bound, $14.00.

The second edition of this standard engineering work was published in 1901, and the rapid advances which have been made in sanitary science since that time compelled the revision of the work. Colonel Moore, the author, passed away, and at the request of the publisher, Mr. Silcock undertook last year to revise the work for the third edition, the previous editions being out of print. It was necessary for Mr. Silcock to make alterations and additions to practically every chapter of the work. He also omitted much information which had become out of date. Especially was it necessary to revise very completely the chapters dealing with methods of sewage purification. This branch of sanitary engineering has gone forward by leaps and bounds during recent years, and where in the former edition three chapters covered the subject, six are now required. Mr. Silcock has described and illustrated representative work, embodying the latest and most approved English practice in this important department. Great advances have also been made in the engineering work of garbage and sewage destruction, and the chapter on destructors has been largely recast and rewritten because the older forms of such apparatus have become obsolete. The different types of destructors now on the English market are fully described and results of important installations in England are given with particularity. Engineers will be glad to know that Mr. Silcock has retained and, where necessary, revised all of the hydraulic tables of velocity and discharge of the various sizes and forms of sewers, which characterized the earlier editions of this important work. They have proven themselves to be of great value to engineers in designing sewerage systems. Mr. Silcock has included a resume of the reports of the Royal Commission on Sewage Disposal from 1898 to 1908, also articles dealing with the local government board requirements, local inquiries, lifting of sewage, disinfection by heat, utilization of destructor residuals, reinforced concrete and descriptions of recent sewage purification works. The reviser has also made extensive additions to the chapter on sewer ventilation.

Former editions have been in one volume, but because of the increased size of the book, which now takes on almost the form of a *vade mecum* of sanitary engineering, this edition is published in two volumes.

It is to Great Britain that sanitary engineers have to look at the present time for much of the experience in sewage and garbage disposal systems, as the practice in this country has not attained a sufficient volume to warrant a complete and scientific treatment of the subject, and, while conditions in the United States in some particulars vary greatly from British conditions, still engineering features of this kind of work are very well established by British practice, and therefore we can look to their engineers for authoritative pronouncements upon this class of work. The chapters which refer to plumbing apparatus and installation are of no use to American sanitary engineers, as we feel that we have far outstripped our British and Continental friends in designing and installing plumbing apparatus; with the exception of this, however, this valuable treatise will be thoroughly appreciated by United States engineers.

Piping Installation in Buildings"; sanitary, hydraulic and gas, by Wm. Paul Gerhard, C. E., 8¼x5¾ inches, 80 pages, cloth bound, McGraw-Hill Book Co., New York city, $1.00. Mr. Gerhard has had nearly thirty years' experience in this branch of building construction and sanitation, and this useful book is the development of a series of articles which were contributed some years ago to an architectural publication, now revised and brought up to date with much new matter added. The subject is dealt with from a practical point of view only, and Mr. Gerhard has purposely omitted theoretical considerations, which may be found in other books of his writing. The intention of Mr. Gerhard was to provide a book for the young men beginning actual practical work, for architectural superintendents, health and plumbing inspectors, and superintendents and foremen of plumbing firms. The author's wide experience and long study of this subject makes anything which he may say upon it of great value. The book is treated in axiomatic form, in which he has made 262 general statements which govern the construction of piping installation and each of these is commented upon in accordance with its importance. The subject is treated in the following order: 1. Sewer, water and gas connections; 2. Gas piping; 3. Rough work, drain, soil and leader system; 4. Water pipes, pumps, tanks, etc.; 5. Roughing for the plumbing fixtures; 6. Setting up and connecting plumbing fixtures; 7. Completing the work, turning on the water and gas; 8. Tests; 9 Records and plans.

The Proceedings of the Twenty-Seventh Annual Convention of the National Association of Master Plumbers, held at Detroit, Mich., June 22, 23 and 24, 1909, have been issued by the National Office at 1426 New York avenue, Washington, D. C., in the usual handy size, 5¼x8 inches. It makes a neat volume of 174 pages, is printed on good paper and carefully gotten up in every respect. The frontispiece, following established precedent, is an excellent half-tone engraving of the portrait of the president of the association, Walter D. Nolan, of Washington, D. C.

Wm. Paul Gerhard, the versatile consulting engineer for hydraulic and sanitary works, of New York City, is about to bring out a new and interesting work which will be entitled "The Water Supply, Sewerage and Plumbing of Modern City Buildings." The work will consist of about 500 pages with 214 illustrations, 15 tables and 25 diagrams. It is expected that this work will be issued in November. Advance orders for the book will be accepted by "Domestic Engineering" now.

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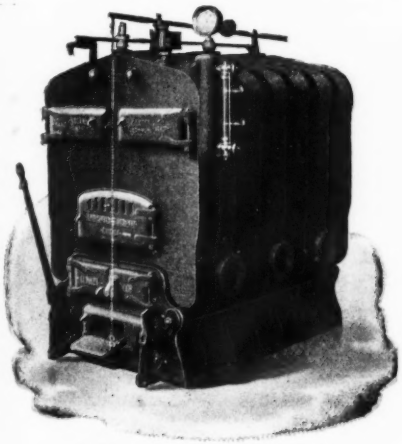
"In unity there is strength" and in the combination of two such sturdy heating forces as IDEAL Boilers and AMERICAN Radiators there is the unity of efficiency, economy and durability for one end, the production of good heating results through fitting and worthy mediums.



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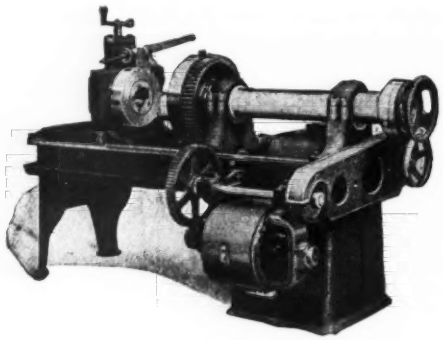
WITH THE MAKERS

Motor Driven Pipe Threading Machine.

The Peerless pipe machine here shown is manufactured by the Bignall & Keeler Mfg. Co., Edwardsville, Ill. It is driven by direct connected motor, doing away with all over-head shafts and belting. This permits placing the machine in basements or buildings with low head room. The motor is located out of the way of oil and dirt. A constant speed motor is used, as the changes of speed are obtained through the gear box. A speed plate is attached to the box, which



Peerless No. 3 improved pipe machine.

shows at a glance how to set the two levers for obtaining the speed for the various sizes of pipe. The adjustments necessary to obtain threads of different gauges are made by turning the adjusting nut which is attached to the cam ring bracket by means of a swivel yoke. The adjusting screw passes through the nut and is connected to the die lever. Turning the nut in either direction revolves the cam ring, causing the dies to expand or contract. Those desiring further information about these power machines should mention this article when writing to the manufacturers.

A Clayton & Lambert Torch.

The C. & L. No. 32 torch.

According to the claims of the manufacturers, there is no torch on the market that makes a more perfect fire, whether employed indoors or out, in hard wind or extreme cold, than the No. 32 here shown. Other claims made by the Clayton & Lambert Mfg. Co., of Detroit, Mich., for this torch are, that a surprisingly small amount of gasoline is required considering the results obtained in heat efficiency. A strong blast heat is generated by a powerful burner and the resulting blue flame is said to be a joy to the user. Every required adjustment is quickly made, the torch is strong, exceedingly well built and handsomely finished. Mention this article when writing for details and prices of these torches.

THE SHOP BOOKSHELF

Being a brief mention of late publications which are worthy of special notice because of their unusual interest to the trade. They should be on "The Shop Bookshelf" in every plumbing and steam fitting establishment for instant reference. A free copy of any publication referred to under this heading may usually be had by mentioning "Domestic Engineering" when you write.

From the Dodge Mfg. Co., Mishawaka, Ind.: A folder, 6"x7¾", four pages, dealing with the Dodge bearing metal. Also illustrates Dodge's Self-oiling rigid pillow block.

From the Champion Safety Lock Co., Geneva, Ohio: "Pure Water," a 5¾"x8¼" paper covered booklet of 16 pages descriptive of the Champion Germ Proof Filter. Convincingly written and well illustrated.

From the American Steam Gauge and Valve Mfg. Co., Boston, Mass.: A 6"x9" twelve-page booklet showing several of the American gauge boards. The designs illustrated are both fancy and plain, with from two to nine instruments on each.

From the Ideal Furnace Co., Detroit, Mich: A 5"x8" catalogue of eight pages, descriptive of Radiant steam and hot-water boilers. The booklet is well illustrated, the descriptions well written, and information as to styles, sizes, ratings and prices very complete.

From the Atlantic Filter Co., Buffalo, N. Y.: A 6"x9" catalogue of Paddock water filters, 16 pages, illustrated with good half-tone engravings and sectional view drawings. The advantages claimed for the double filtration and quick cleaning features are convincingly presented.

From Pennsylvania Structural Slate Company, Dome building, Easton, Pa.: "Slate and Its Uses," a 5"x8" book of eighty-four pages, bound in heavy paper covers, profusely illustrated with half-tone engravings. Several pages of the book are devoted exclusively to sanitary slate, of particular interest to the plumbing trade.

From the Lavigne Mfg. Co., Detroit, Mich.: A 3½"x 6¼" booklet of 16 pages with illustrations on nearly every page of the Lavigne Twentieth Century radiator valves. Full details with prices are given on Lavigne quick opening, screw stem, corner, and packless radiator valves and on the Lavigne union elbows.

From the Davis-Bournonville Company, 90 West street, New York, N. Y.: A catalogue of Oxy-Acetylene welding and cutting apparatus. Size, 6¾"x10", thirty-two pages, paper covers. Describes, with several full-page illustrations, the features and advantages of the Davis-Bournonville Torch used in Oxy-Acetylene welding and cutting.

From L. H. Drury, with The Holland Radiator Company, Chicago: "Hits," a four-page 4"x9" folder. This is the second number of this publication, which is to be issued "occasionally" during the year. Strickland W. Gilliland's well-known poem, "Finnigan to Flannigan," and a humorous bit of prose entitled, "A Radiator Tragedy," by the same author, comprise the contents of this issue. In this latter tale Mr. Gilliland relates a very

amusing experience with a hotel radiator which he attempted to regulate.

From Parmelee Wrench Co., 1056 Monroe street, Chicago, Ill.: A 3½x6¼" circular, illustrating and describing the Parmelee Pipe Wrench, "The Toothless Wonder." A convincing bit of advertising matter, explaining the positive grip and ratchet-like action that does its work without danger of crushing or chewing the pipe.

From Rogers, Printz & Co., Warren, Pa.: A neat little 3 1/24"x6", eight-page booklet "About a New Wrench." The book very convincingly illustrates the advantages of the new R. P. Co. wrenches, the feature of which is the instantaneous grip given by simply raising or lowering the yoke or sleeve, with the thumb of the hand holding the tool.

From the Nelson Valve Co., Chestnut Hill, Philadelphia: A twelve-page booklet, 3½"x6". Describes advantages claimed for the double disc gate valve over the old style solid wedge valve. Among the several excellent illustrations are a number showing the results of simple tests made to determine the value of the new as compared with the old style valves.

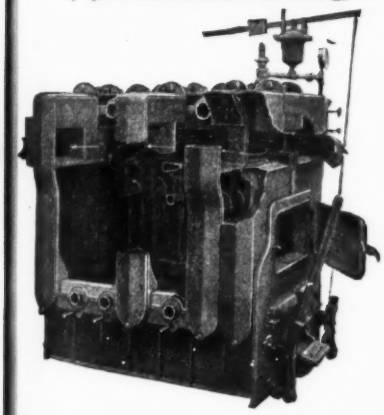
From Wells Brothers Company, Greenfield, Mass.: A very neat 5"x7½" sixteen-page booklet on die holders for use on screw machines. The booklet contains seven full-page half-tone engravings of the higher order and is attractively printed on the finest paper. Prices and full information is given with the well written descriptions of the Little Giant die holders and dies.

From the Estate of Charles Perkes, 627 Arch St., Philadelphia: A 3½"x6" folder of four pages, describing the Perkes' Type "D" vacuum by-pass valve. According to the claims of the manufacturer this valve provides a simple means of operating a vacuum steam heating system by gravity, as well as vacuum, without changing the adjustment of the needle or vacuum orifice in the valve.

From Ideal Heating Co., Oskaloosa, Iowa: A 9"x12" four-page folder and a 4"x6" 32-page booklet showing the Phelps water tube smokeless heaters. Both folder and booklet give considerable space to a consideration of the comparative properties of the different kinds of coal and to the importance of abating the smoke nuisance. The illustrations are good and information as to ratings, prices, etc., very complete.

From Joseph Dixon Crucible Co., of Jersey City, N. J.: "The Proper Care of Belts," a 3¼"x6¼" booklet of 24 pages. It is divided into three sections, headed respectively: Belts; Belt Dressings; and Hints, Kinks, Tables. The first section deals with the running conditions of belts; the second takes up treatment with various preparations; and the third, as the title indicates, has some general points upon belting and its use.

CAPITOL BOILERS AND RADIATORS



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Two Things to Remember

FIRST: In case of any accident to the sections of **Improved Capitol Boilers,** quick repairs can be accomplished more quickly and easily than with any other boiler.

SECOND: Should it be necessary to make use of the quick repair feature, the permanent repair can be made with less expense. Why? Because Capitol Boilers have divided sections. The sections being in halves it is not necessary to purchase a section for the entire width of of the boiler but for only one half.

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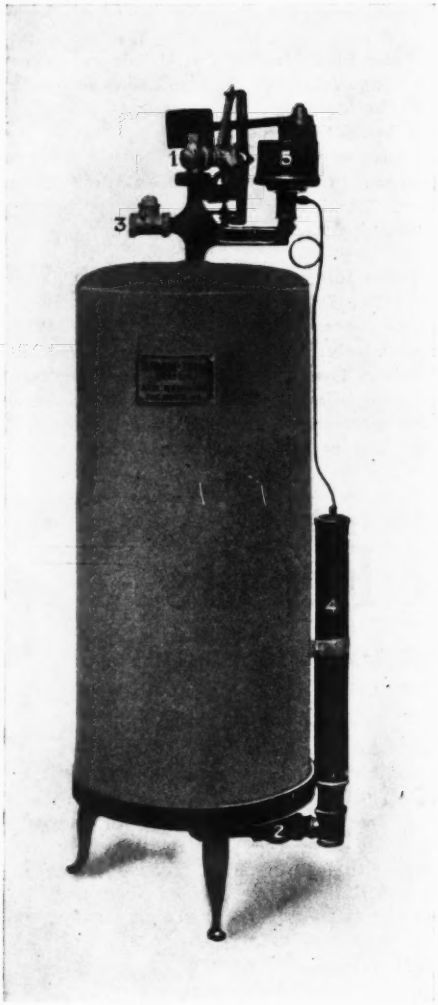

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The Sparks-Eddins System

of Vacuum Heating Creates Quick Heat. Lowers its Cost.

This system will circulate steam quicker, and with less pressure than is possible with any low pressure vacuum system, it does not use a vacuum pump or exhauster operated by outside power—and our pump will do the same work at less than one tenth the expense required for the operation of such devices.

Effects a positive saving in first equipment, and works every day without attention.

An Agency for This System

would add prestige and profit to your business. It offers almost unlimited opportunities for new business.

Get our proposition. Learn the truth about vacuums—and why you can profitably handle this system. Now's the time.

AUTOMATIC VACUUM PUMP CO.

121 North Eighth Street, ST. LOUIS, MO.

THE ADVERTISEMENTS IN DOMESTIC ENGINEERING ARE INDEXED. TURN TO PAGE XXX

VIRGINIA